

**CLAIMS**

Please cancel claims 1-24.

Please add the following claims:

25. (Newly Added) A computer-implemented method for processing a plurality of pixels representing at least a portion of an image, comprising the steps of:

    scanning a pixel in the plurality of pixels to determine if the pixel contains image information of significance;

    in response to the pixel containing image information of significance, determining if only an immediately previously scanned single pixel (single pixel) contains image information of significance;

    in response to the single pixel containing image information of significance, assigning the pixel to an existing image segment of the single pixel;

    in response to the single pixel not containing image information of significance, creating a new image segment and assigning the pixel to the new image segment; and

    in response to the assigning or creating steps, updating inertia information for either the new image segment or the existing image segment, respectively.

26. (Newly Added) The method of claim 25, further comprising the steps of:

    (a) determining if only a single, previously scanned pixel adjacent to the pixel (adjacent pixel), that is not the single pixel, contains image information of significance;

    (b) determining if the adjacent pixel is assigned to an image segment that does not include the pixel;

    in response to steps (a) and (b) being true, merging the new image segment or the existing image segment, respectively, that includes the pixel, with the image segment; and

    repeating all the previous steps for a next sequential pixel of the plurality of pixels.

27. (Newly added) The method of claim 25, wherein the inertia information is linear and comprises at least one of a number of pixels in the new, existing, or image segments, a sum of x-coordinate values for each pixel in the new, existing, or image segments, a sum of y-coordinate values for each pixel in the new, existing, or image segments, and a sum of products of the x-coordinate values and y-coordinate values.

28. (Newly added) The method of claim 25, wherein the plurality of pixels represent a single horizontal line of pixels.

29. (Newly added) The method of claim 25, wherein the immediately previously scanned single pixel is immediately to the left of the pixel and the adjacent pixel is immediately above the pixel.

30. (Newly added) The method of claim 25, further comprising storing in a register the updated inertia information immediately after the updating step is performed.

31. (Newly added) The method of claim 25, wherein the merging step comprises summing the inertia information of either the new image segment or the existing image segment, respectively, with inertia information of the image segment, thereby merging the new image segment or existing image segment into the image segment.

32. (Newly Added) An image processing system for processing a plurality of pixels representing at least a portion of an image, comprising:

- scanning means for scanning a pixel in the plurality of pixels to determine if the pixel contains image information of significance;

- in response to the pixel containing image information of significance, processing means for determining if only an immediately previously scanned single pixel contains image information of significance;

- in response to the single pixel containing image information of significance, the processing means for assigning the pixel to an existing image segment of the single pixel;

- in response to the single pixel not containing image information of significance, the processing means for creating a new image segment and assigning the pixel to the new image segment; and

- in response to the assigning or creating steps, the processing means for updating inertia information for either the new image segment or the existing image segment, respectively.

33. (Newly Added) The system of claim 32, further comprising:

- (a) the processing means for determining if only a single, previously scanned pixel adjacent to the pixel (adjacent pixel), that is not the single pixel, contains image information of significance;

(b) the processing means for determining if the adjacent pixel is assigned to an image segment that does not include the pixel;

in response to steps (a) and (b) being true, the processing means for merging the new image segment or the existing image segment, respectively, that includes the pixel, with the image segment; and

the processing means for repeating all the previous steps for a next sequential pixel of the plurality of pixels.

34. (Newly added) The system of claim 32, wherein the inertia information is linear and comprises at least one of a number of pixels in the new, existing, or image segments, a sum of x-coordinate values for each pixel in the new, existing, or image segments, a sum of y-coordinate values for each pixel in the new, existing, or image segments, and a sum of products of the x-coordinate values and y-coordinate values.

35. (Newly added) The system of claim 32, wherein the plurality of pixels represents a single horizontal line of pixels.

36. (Newly added) The system of claim 32, wherein the immediately previously scanned single pixel is immediately to the left of the pixel and the adjacent pixel is immediately above the pixel.

37. (Newly added) The system of claim 32 further comprising a register for storing the updated inertia information immediately after the processor means performs updating.

38. (Newly added) The system of claim 32, wherein the processing means for merging comprises summing the inertia information of either the new image segment or the existing image segment, respectively, with inertia information of the image segment, thereby merging the new image segment or existing image segment into the image segment.

39. (Newly Added) A computer program product stored on a computer operable medium containing instructions effective, when executing in a data processing system, to cause the data processing system to process a plurality of pixels representing at least a portion of an image, the computer program product comprising:

instructions for scanning a pixel in the plurality of pixels to determine if the pixel contains image information of significance;

in response to the pixel containing image information of significance, instructions for determining if only an immediately previously scanned single pixel contains image information of significance;

in response to the single pixel containing image information of significance, instructions for assigning the pixel to an existing image segment of the single pixel;

in response to the single pixel not containing image information of significance, instructions for creating a new image segment and assigning the pixel to the new image segment;

in response to the assigning or creating steps, instructions for updating inertia information for either the new image segment or the existing image segment, respectively;

(a) instructions for determining if only a single, previously scanned pixel adjacent to the pixel, that is not the single pixel, contains image information of significance;

(b) instructions for determining if the adjacent pixel is assigned to an image segment that does not include the pixel;

in response to steps (a) and (b) being true, instructions for merging the new image segment or the existing image segment, respectively, that includes the pixel with the image segment; and

instructions for repeating the above steps for a next sequential pixel of the plurality of pixels.